

May 12, 1989

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**COLBERT LANDFILL RD/RA  
COUNTY/AGENCY TECHNICAL SESSION  
MEETING AGENDA**

**I. Discuss the key points for the following work plans:**

- Health and Safety Plan
- Quality Assurance Project Plan
- Phase I Ground Water Monitoring Plan

**II. May 24, 1989, Public Meeting (time permitting)**

- Participants
- Format/Schedule
- Content

**USEPA SF**



**1414609**

## SUMMARY OF KEY POINTS

### HEALTH AND SAFETY PLAN COLBERT LANDFILL RD/RA PROJECT

1. Primary Phase I Project Activities Include:
  - o Well Construction
    - Drilling
    - Installation
    - Development
  - o Ground Water Sample Collection
  - o Air Monitoring
  - o Pilot Stripping Tower Construction and Operation
2. Hazard Assessment:
  - o Hazard varies according to the following areas:
    - Refuse Disposal Zone - potential for higher concentrations of solvents, unknown hazardous substances, and methane gas and buried drum explosion hazard.
    - Buffer Zone - 75 feet around perimeter of refuse disposal area. Also potential for higher concentrations of solvents (which may have migrated laterally from the point of discharge on the refuse disposal area), and potential methane gas hazard.
    - Areas Outside of the Refuse and Buffer Zones - Contamination is anticipated to be limited to the water and soil from water-bearing formations (80 feet below ground surface) at relatively low concentrations (generally less than about 3 ppm for soil and water).

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3. Levels of Protection:

- o Level D for all non-intrusive work, and intrusive work\* to a depth of 60 feet at locations outside of the refuse disposal and buffer zones. Level D protection includes: hard hat, safety glasses, long-sleeved shirts, long pants, and steel-toe shank leather or chemical resistant boots.
- o Level D (modified) for intrusive work at depths of over 60 feet at areas outside of the refuse disposal and buffer zone areas and for ground water sampling. Level D (modified) includes: hard hat, safety glasses, Tyvek coveralls, gloves, and steel-toe and shank chemical resistant boots.
- o Level C for intrusive work on the refuse disposal area, and during the first boring within each well cluster (until a baseline of air monitoring data is obtained for that location) in the buffer zone. After installing the first boring in each buffer zone well cluster, workers may downgrade to Level D (modified) protection if air monitoring data indicated less than 5 ppm total organic vapors during installation of the first boring. Level C protection includes: hard hat, full-face air purifying respirators equipped with organic vapor and high efficiency particulate cartridges, Tyvek coveralls, gloves, steel-toe and shank chemical resistant boots, and taped glove to coverall and boot to coverall seams. Workers will also tape glove to coverall and boot to coverall seams while wearing Level D (modified) protection in the buffer zone.

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\* For the purposes of this plan, intrusive work is defined as subsurface work at locations and depths where contamination can reasonably be expected to be encountered.

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4. Air Monitoring:

- o Photoionization meter for ambient organic vapors (during all intrusive activities), and combustible gas indicator (CGI) for monitoring methane gas explosion hazard (during intrusive activities on the refuse disposal and buffer zones only).

5. Heat and Cold Related Illnesses:

- o Workers will be trained to recognize symptoms of heat and cold related illnesses. Provisions for monitoring workers for heat stress are included in the Plan.

6. Work Zones:

- o Refuse Disposal and Buffer Zones - Area within a 50-foot radius of borehole or monitoring well will be the exclusion zone; area within 50- to 60-foot radius will be the contamination reduction zone; support zone will be outside of contamination reduction zone. Workers and equipment must undergo decontamination in the contamination reduction zone. Used decon water, well development, and purge water will be treated by bubbling air through collected water to strip residual contaminants, and will then be discharge directly to the ground. Drill cuttings will be transported to the refuse disposal area.
- o Other Areas - Not considered a chemical exposure hazard. However, area is hazardous due to close proximity to heavy equipment use. Therefore, an industrial work zone will be instituted within 50 feet of operating equipment or intrusive activities. Drill cuttings, well development, and purge water will not be considered hazardous at these locations and will be discharged near the work area; drill cuttings may be transported to the refuse disposal area for aesthetic proposes. Workers will wear Level D (modified) when drilling at depths greater than 60 feet or when collecting ground water samples. Tyvek

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and other disposable gear generated during these activities will be treated as non-contaminated trash.

If organic vapors are detected above the action level at areas outside of the buffer zone - an exclusion zone, contamination reduction zone, and a full decontamination procedure will be implemented. Ground water and drill cuttings will then be treated as potentially hazardous materials. Cuttings will be collected for subsequent disposal on the refuse disposal area, and development and purge water will be treated by bubbling air through collected ground water to strip residual contaminants. This water will then be discharged directly to the ground.

7. Site Security:
  - o Project Support Zone will be fenced.
  - o Will lock or place an immovable object over the borehole or well during the night and on weekends.
8. All workers performing intrusive activities will be trained according to 29 CFR 1910.120, and will be involved in a medical monitoring program.

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### QUALITY ASSURANCE PROJECT PLAN COLBERT LANDFILL RD/RA PROJECT

1. Ground water analysis parameters will include:
  - o Volatile chlorinated organics (the six "constituents of concern")
  - o Hardness
  - o Iron
  - o Manganese
  - o Temperature
  - o pH
  - o Conductivity
  - o Chemical Oxygen Demand
  - o Total Organic Carbon
  - o Chloride
  - o Sulfate
  - o Nitrate
  - o Total Suspended Solids

All samples will be analyzed for volatile chlorinated organics, temperature, pH, and conductivity. Analysis for other parameters will be performed as needed for treatment system design.

2. Method #8010: GC/Hall detector analysis for volatile organics. Perform dual column confirmation.
3. Laboratory QA/QC:
  - o Surrogate Recoveries of 80 - 120%  
Surrogates: bromochloromethane  
2-bromo-1-chloropropane  
1,4-dichlorobutane
  - o 5 percent Matrix Spike/Matrix Spike Duplicate Samples  
EPA Control Limits = 1,1-DCA 61 - 145%, TCE 71 - 120%  
Acceptable percent difference = 20%
  - o Blanks analyzed every 12 hours or for each case.
  - o Method #8010 detection limits and calibration procedures.

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- o Holding Time = 14 days (preserved at 4 degrees C).
  - o Will not include interlab comparison samples.
4. Data Reduction, Validation, and Reporting:
- o As per EPA protocols, where appropriate. Corrective action is specified in Work Plan.
5. Documentation:
- o Will include field notebooks, sample collection forms, log of exploration forms, sample labels, chain of custody records, chain of custody seals, sample analysis request packing lists, and photographs.
6. Field Instruments:
- o Photoionization detector, combustible gas indicator, pH meter, conductivity meter, temperature meter, and water level indicator. Calibration or performance check procedures and frequency, acceptable accuracy and precision are specified in the Plan.
7. Stripping Tower Air Emissions Sampling for Volatile Organics:
- o Collect one upwind sample, one downwind sample, and one blank for each sampling event. Analyze by NIOSH Method #1003, #1022, and #1005 for all six of the constituents of concern. Determine emission rate from stripping tower by mass balance calculations. Collect 10 percent duplicate and blank samples.
  - o Detection Limit = 0.01 milligrams per sample.
8. Field QA/QC Samples:
- o 10 percent transport blanks, rinsate blanks, transfer blanks, and duplicates.
9. Performance and System Audits:
- o Plan provides for periodic audits of sampling activities and laboratory operations.

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10. Sampling Plan - Appendix to QAPP:

o Ground Water Sampling

Purge three well casing volumes or until dry. Collect four pH and conductivity readings; one temperature reading.

11. Equipment decon to include a tap water rinse, Alconox and water wash, another tap water rinse, and a final rinse with organic free water.



## SUMMARY OF KEY POINTS

### **PHASE I GROUND WATER MONITORING PLAN COLBERT LANDFILL, RD/RA PROJECT**

1. Scope of Plan - Installation of monitoring wells to provide additional data to better define hydrogeologic conditions and contaminant distribution, and to assist in design and monitoring of pilot extraction wells.
2. Monitoring wells will be installed in three areas:
  - o South area - Single monitoring wells at three locations.
    - Upper sand is target aquifer.
  - o West area - Monitoring well groups at four locations.
    - One to three monitoring wells at different depths in each group.
    - Lower sand is target aquifer.
  - o East area - Monitoring well groups at four locations.
    - One to three monitoring wells at different depths in each group.
    - Upper sand aquifer (if present), lower sand aquifer (if present), and weathered basalt/Latah or Latah aquifers are targets of wells.
3. South Area Wells
  - o Well depth estimated at 100-120 feet.
  - o Air Rotary, 6-inch casing.
  - o Samples: grab samples at 5-foot intervals to ~80 feet, driven samples at 5-foot intervals to bottom of boring, approximately 10 feet into aquitard unit.
4. West Area Wells
  - o Well depths 200-350 feet.
  - o Lower sand aquifer thickness will determine number of wells per group:

- If about 175 feet or less in thickness, will install two wells - one at base of aquifer, one in upper 90 feet.
- If greater than about 175 feet in thickness, will install three wells - one at base of aquifer, one in upper 1/3 of the aquifer, and one in the middle 1/3 of the aquifer.
- o Plan to step down casing size at confining layer separating the upper sand aquifer from the lower sand aquifer (lacustrine silt and clay) from 10 inches to 8 inches or from 8 inches to 6 inches for wells shallower than about 220 feet (see Well Installation, Item No. 6).
- o Air Rotary or Odex with possibility of switching to Cable Tool if necessary due to high water production.
- o Samples: Combination of driven samples and grab samples in the first/deepest boring at any location, grab samples in subsequent borings.
- o American Colloid "Gold" grout or equivalent, not bentonite pellets, used to seal above sandpack (see Well Installation, Item No. 6).

##### 5. East Area Wells

- o Anticipated well depths 100-250 feet.
- o Wells will be screened in upper aquifer (if present), lower sand aquifer (if present), and weathered basalt/Latah or Latah.
- o The deepest boring in each group will be terminated in a low permeability unit.
- o Plan to step down casing size at confining layer separating the upper sand aquifer from the lower sand aquifer (if present, 10 inches to 8 inches, or 8 inches to 6 inches for shallower wells).
- o Drilling Method, first boring at each location: Air Rotary equipment to about 80 feet, Cable Tool for rest of boring with frequent samples. Subsequent borings at each location: Air Rotary.

6. Monitoring Well Installation

- o Cable Tool equipment preferred for monitoring well installation.
- o Wells < 220 feet in depth, 2-inch ID Schedule 80 PVC.
- o Wells > 250 feet in depth, 2-1/2-inch ID Schedule 80 PVC.
- o Screen size = 0.020-inch slot.
- o Stainless steel centralizing devices above and below well screen.
- o Sandpack - Colorado Silica Sand (appropriate size) with at least 2 feet of fine sand (finer than No. 20) at top.
- o Annulus seal - American Colloid "Gold" grout above sandpack, "Volclay" grout above "Gold" grout to near surface, cement-bentonite surface seal. Bentonite pellets may be appropriate for sandpack seal in south and some east wells.

7. Development

- o Surging, if appropriate, followed by flushing using gas drive pump or air lift.

8. Ground Water Sampling

- o Conducted at least 2 weeks to 1 month following well development.
- o Sampling protocols described in QAPP plan.
- o Sampling frequency as described in Consent Decree Scope of Work.

10. Field verification of existing domestic wells

- o To be accomplished prior to selection of initial monitoring well locations for the South Area.
- o Survey selected domestic wells to determine depth, reference elevation, and presence of access port.
- o Ground water elevation survey.
- o Evaluate need for soil gas survey.